

SCIENCE

And Technology Program



Theme Area: Environmental Resources

Program Area: Pest Management

Project No.: ER00.18

Project Title: Restoration of Saltcedar Infested Facilities and Habitats

Principal Investigator: Sarah Wynn, e-mail: swynn@do.usbr.gov

Co-Principal Investigators: Darrell Ahlers, Debra Eberts, Fred Nibling, Dave Sisneros, and Larry White

Abstract: The development of water resources in western rivers has resulted in flow regimes that both discourage native riparian species and encourage their replacement by invasive species such as saltcedar. The result has been vast monotypic stands of these undesirable species, which typically exhibit lower wildlife habitat value than native riparian communities. Saltcedar has been implicated as a major cause of water loss, soil degradation through elevated salinity, channel structural deterioration, and limited access to water management facilities for inspection, maintenance, and recreation.

Effective water management, where heavy saltcedar infestations exist, is difficult. A number of operational and environmental management issues need to be addressed to clarify agency goals and responsibilities in dealing with saltcedar. Currently, water management and habitat restoration in riparian areas with saltcedar are confounded by the discovery that this shrub is sometimes utilized as breeding habitat by the southwestern willow flycatcher, a federally listed endangered species. Testing of biocontrol methods in southwestern willow flycatcher habitat is thwarted by threatened and endangered (T&E) species concerns. Activities in this proposal are designed to address T&E and National Environmental Policy Act (NEPA) issues and concerns associated with saltcedar control and restoration. To this end, questions needing to be answered are:

- What are the short- and long-term effects of saltcedar control and vegetation restoration on the value of wildlife habitat, especially for the southwestern willow flycatcher?
- How is saltcedar most effectively controlled in various circumstances?
- What are the most effective and practical vegetation restoration methods to be used following control?
- What are effective plant, invertebrate and avian indicator species for riparian restoration?
- What species with habitat value can replace saltcedar if hydro-geological parameters do not support the re-establishment of native vegetation?

SCIENCE

And Technology Program



We propose testing control of saltcedar at up to four sites using various integrated pest management (IPM) methods. Selected riparian area restoration methods will be tested to provide Reclamation and other agencies with documented tools and techniques to use to re-establish vegetation *with increased habitat value*. The reduction of saltcedar and the increase of other vegetative species will be quantified and the effects of saltcedar control and restoration on the vegetation, avian, and invertebrate communities will be monitored and documented. This information will be used to develop habitat suitability indices based on biological and physical attributes that can be used to predict changes in habitat value and wildlife use resulting from basin-wide saltcedar control programs.

This study will consist of two phases. During the initial phase, literature will be reviewed, treatment and control sites will be evaluated and selected, and vegetative, avian and invertebrate indicator species will be identified. Indicator species monitoring methods will be field tested. Control methods, treatment methods, and restoration methods will be field tested. Optimal plot size will be determined. During phase two, baseline indicator species monitoring will occur before any control measures are taken. Saltcedar control treatments will be carried out followed by restoration of native and selected non-native vegetation. Additional monitoring over time will follow control and restoration measures, resulting in wildlife habitat indices.

Partners include USDA-APHIS, Cornell University, New Mexico State University, the Bureau of Land Management, the Army Corps of Engineers, USGS-BRD, the Saltcedar Biocontrol Consortium, the Yuma, El Paso, Albuquerque Area Offices and several Reclamation regional offices. Potential partners include the Southwestern Willow Flycatcher Consortium, US Fish and Wildlife Service, and the National Park Service.

Related link:

[Www.usbr.gov/ecology](http://www.usbr.gov/ecology)